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## *Cleptes (Leiocleptes) mareki* n.sp., from China (Hymenoptera Chrysididae Cleptinae)

**Abstract** - *Cleptes mareki* n.sp. from China is described. This species belongs to the *Cleptes (Leiocleptes) nitidulus* species-group. *Cleptes mareki* n.sp. can be distinguished from all of the other known species of the subgenus *Leiocleptes* by the following characters combination: dark blue head and mesosoma, almost entirely black metasoma, laterally with a feeble violet-blue reflection, and without any lateral sharp edge; mesosoma with simple, small and scattered punctures and tergites III-IV with double punctuation. A comparison with the supposedly related species *Cleptes doii* Tsuneki is also given.

**Keywords:** *Cleptes mareki* n.sp., *Leiocleptes*, China.

**Riassunto** - *Cleptes (Leiocleptes) mareki* sp.n. della Cina (Hymenoptera Chrysididae Cleptinae).

Viene descritto *Cleptes mareki* della Cina appartenente al gruppo di specie di *Cleptes (Leiocleptes) nitidulus*. *Cleptes mareki* sp.n. si differenzia dalle altre specie conosciute del sottogenere *Leiocleptes* per la seguente combinazione di caratteri: capo e mesosoma blu scuro, metasoma quasi completamente nero, con un debole riflesso laterale blu-violetto, e assenza su quest'ultimo di un bordo laterale a spigolo vivo; mesosoma con punteggiatura formata da punti semplici, piccoli e distanziati e tergiti III-IV con punteggiatura doppia. Viene inoltre fornita una tabella comparativa con la specie ritenuta più affine, *Cleptes doii* Tsuneki.

**Parole chiave:** *Cleptes mareki* sp.n., *Leiocleptes*, Cina.

### Introduction

In October 2001 my colleague Marek Halada (České Budějovice, Czech Republic) sent to my friends Gian Luca Agnoli (Bologna, Italy) and Maurizio Pavesi (Milano, Italy) and to me a series of 46 specimens of a Chinese *Cleptes*. It turned out to be a new species belonging to the *Cleptes (Leiocleptes) nitidulus* species-group, but similar in its dark colour to East Palaearctic and Oriental taxa of *Cleptes (Cleptes) satoi*, *C. (C.) asianus* and *C. (C.) townesi* groups. Before Móczár (1962), the most important authors (Mocsáry, 1889; Buysson, 1891-1896; Linsenmaier, 1959) did not consider the species of the genus *Cleptes* as belonging either to different subgenera

or species-groups. Móczár (1962) introduced 7 subgenera, providing keys and figures. Kimsey (1981) added a new Neotropical subgenus; later, Kimsey & Bohart (1991) synonymized all the subgenera and replaced them with 8 species-groups. Recently Móczár (1997a, 1997b, 1998a, 1998b, 1998c, 2000a, 2000b, 2001) revised the whole genus *Cleptes*, reinstating the synonymized subgenera, adding several new subgenera and species-groups, and providing keys to all the species and illustrations for most of the groups. Móczár (1997a, 1997b, 1998b) included 26 taxa in the subgenus *Leiocleptes*, and divided it in 4 groups (*Cleptes nitidulus*, *C. alienus*, *C. morawitzi* and *C. rugulosus* species-groups) which occur in the Holarctic Region and partially in the Oriental Region.

### Methods and abbreviations

The external and internal morphological features were examined by means of a stereomicroscope Leica MZ-5. Male genitalia and mesosoma were photographed by a Scanning Electron Microscope (SEM) Jeol 5610 LV.

The following abbreviations are used (Kimsey & Bohart, 1991): l/w = length/width ratio, MOD = mid ocellus diameter, S = scapus; P = pedicel, F = flagellomere, T = metasomal tergum, S = metasomal sternum. PPW = posterior width of the propodeum; I, II, III etc. are Roman numerals associated to antennal or metasomal segments.

### Subgeneric diagnosis of *Leiocleptes*

The species of the subgenus *Leiocleptes* Móczár, 1962 can be recognized as follows:

- pronotum with neither a transverse groove or row of pits on the posterior edge, nor a longitudinal groove along the midline;
- pronotal disc more or less convex;
- last 8 flagellomeres of female's antenna ventrally brownish;
- lateral edges of the metasoma rounded in cross section. Yet, males of the *Cleptes* (*Leiocleptes*) *alienus* group differ from other *Leiocleptes* species because of the lateral edges of the metasoma more flattened and angled, but not as sharp as in *Oxycleptes* Móczár, 1962.

### *Cleptes mareki* n.sp.

*Holotype* ♂: China c., 27.V.1996, Zhongtiao Shan c. [= Mt. Zhongtiao], 45 km W of Sanmenxia, Leg. J. Halada.

*Paratypes*: 43 ♂♂ and 2 ♀♀ with the same data as the holotype.

The holotype is deposited in the "Museo Civico di Storia Naturale di Milano", Italy. Paratypes are in Linsenmaier's collection ("Natur Museum", Lucerne, Switzerland) and in the following private collections: Gian Luca Agnoli (Bologna, Italy), Maurizio Pavesi (Milano, Italy), Oliver Niehuis (Bonn, Germany), Marek Halada (České Budějovice, Czech Republic) and in the author's collection.

HOLOTYPE (Male). Full size: length 5.4 mm.

*Head*. In full face view, length 1.1 mm, width 1.3 mm; in posterior view, depth 0.6 mm. Malar space long (1.2 MOD). Blue, face blue to bluish green; antennal

pedicel blue, scape and flagellomeres black; basal half of the mandibles green, distal half black. Frontal groove very narrow; clypeus truncate, the truncation slightly shorter than the diameter of each antennal socket, fronto-clypeal suture distinctly concave. Face with small and very scattered punctures, which are smaller and barely defined on vertex and frons. Mandibles with two well developed subapical teeth. Hairs very long (1.4 MOD) and dark. Relative lengths of P / F-I / F-II / F-III / F-IV: 0,8 / 1,4 / 1 / 1 / 1.

*Mesosoma*. Length 2.5 mm, width 1.5 mm (PPW 1.2 mm), l/w = 1.67. Pronotum and mesonotum blue, with some darker bluish reflections on scutum; metanotum dark blue; propodeum black; propleuron and mesopleuron blue; tegulae black with some metallic blue reflections, femora blue, fore tibiae brownish, mid and hind tibiae brown with blue reflections, tarsi brown, the fore ones lighter. Anterior transverse pronotal groove with small punctures, although larger than those on the head, and some faint ones in the middle (Fig. 1). Scutum, scutellum and metanotum with fine punctures, more scattered than on the pronotum. Mesopleuron without sulci and with punctures scattered in the upper part, somehow confluent and elongate in the lower one. Propodeum (Fig. 2) dorsally unpunctured, but with a series of ridges forming a reticulation with very irregular and uneven meshes. Propodeal angle as in Fig. 3. Wings weakly infuscate, with a marked radial vein. Propodeal hairs long and dark (1.8 MOD) on the angles, shorter and lighter medially.

*Metasoma*. Length 2 mm, width 1.6 mm, l/w = 1.25. Black with some weak blue reflections laterally; apical margin of T-II and T-III testaceous; tergites gently curved laterally. Sternites entirely black. Punctures on T-I scattered, denser in the middle; anterior face of T-I concave, broad and brown, the remaining entirely black. Punctures of T-II progressively becoming larger and more scattered toward the posterior edge. Punctures on T-III and T-IV double and very uneven, on T-V scattered; the apical edge of each segment smooth. Aedeagus (Fig. 4) with large gonocoxae truncate at apex, volsellae short with long pubescence on the lateral side. Lateral sides of all visible tergites with very long (2 MOD) dark hairs.

#### PARATYPES

*Males*. Similar to the holotype, but some specimens are darker. Testaceous posterior edge of tergites sometimes indistinct; T-I occasionally almost unpunctured; punctuation on T-III and T-IV in few specimens more uniformly scattered than in the holotype.

Also, I observed that aedeagi mounted in Euparal keep the original shape (Fig. 5), while in dry mounted aedeagi the apices of the gonocoxae strongly cross (Fig. 6). This morphological alteration also occurs in aedeagi of other *Cleptes* spp.

*Females*. They differ from males as follows: face black, with some weak green-violet reflections only, vertex with blue reflections; mandibles and scapus dark brown; pedicel brownish; F-I yellowish; F-II to F-XI entirely black, except for ventrally brownish F-IV to F-VII; mesosoma black, pronotum, scutellum and mesopleuron (on the upper part only) with green metallic reflections; femora brown completely non-metallic; tibiae and tarsi pale yellowish; metasoma without any metallic highlights. Punctures on T-III and T-IV double but more scattered than in the male.

#### BIOLOGY

Unknown. All specimens of *Cleptes mareki* n.sp. were collected using yellow pan traps.

## DERIVATIO NOMINIS

This species is dedicated to Marek Halada, who kindly sent to my colleagues and to me all the specimens collected by his father Jiří Halada during a journey in China.

## COMMENT

*Cleptes mareki* n.sp. is the only known species belonging to the *Cleptes nitidulus* species-group with an almost entirely black metasoma (with or without any metallic reflections) in both sexes. Black or dark-blue colour patterns are widespread in several East Palearctic and Oriental *Cleptes* s.str. species-groups (*Cleptes satoi*, *C. asianus* and *C. townesi* groups).

## Discussion

I consider *Cleptes mareki* n.sp. as belonging to the *Cleptes nitidulus* species-group, although it does not completely fit Móczár's (1997a) diagnosis: 1) pronotum without any recognisable pattern of punctures; 2) metasoma with basal terga reddish or yellowish brown and apical segments blackish or black with metallic reflections. Indeed, *Cleptes mareki* n.sp. has a black metasoma, with weak violet-bluish reflections in males and with T-I anteriorly brownish in females. In the subgenus *Leiocleptes* there are two species-groups with black metasoma: *Cleptes alienus* and *C. morawitzi* groups. *Cleptes mareki* n.sp. is excluded from the former because of its metasoma without lateral sharp edges, and from the latter because it has head and mesosoma mostly blue, neither red nor coppery, and T-III with double punctuation.

Among the members of the *Cleptes nitidulus* species-group, *Cleptes mareki* n.sp. seems more closely related to *Cleptes doii* Tsuneki, 1959 from Korea. The following differences are given according to the original description of *C. doii*, since subsequent authors did not add anything to it, and I could not see any material of this species.

	<i>Cleptes doii</i> Tsuneki, 1959	<i>Cleptes mareki</i> n.sp.
Relative length of antennal joints	♂: F-I / F-II / F-III / F-IV = 12 / 10 / 8,5 / 8,5. F-II longer than F-III.	♂: F-I / F-II / F-III / F-IV = 9 / 5 / 8 / 6. F-II shorter than F-III.
Metasomal colour	♀ T-I and T-II ferruginous to reddish-brown with black posterior margin; T-III black with two basal large reddish-brown spots; T-IV entirely black; S-I and S-II entirely reddish-brown. ♂ metasoma purple.	♀ entirely black metasoma. ♂ entirely black with some weak blue reflections laterally; entirely black sternites in both sexes.
Metasomal punctuation	♂ and ♀ T-III "microscopically minutely and densely punctured excepting each apical margin", T-IV "at base more sparsely but somewhat more grossly punctured, with apical border smooth".	punctuation on T-III and T-IV double and very uneven.
Length and density of hairs	sparse and short on head and mesosoma, quite short on metasoma.	very abundant and long on the whole body.

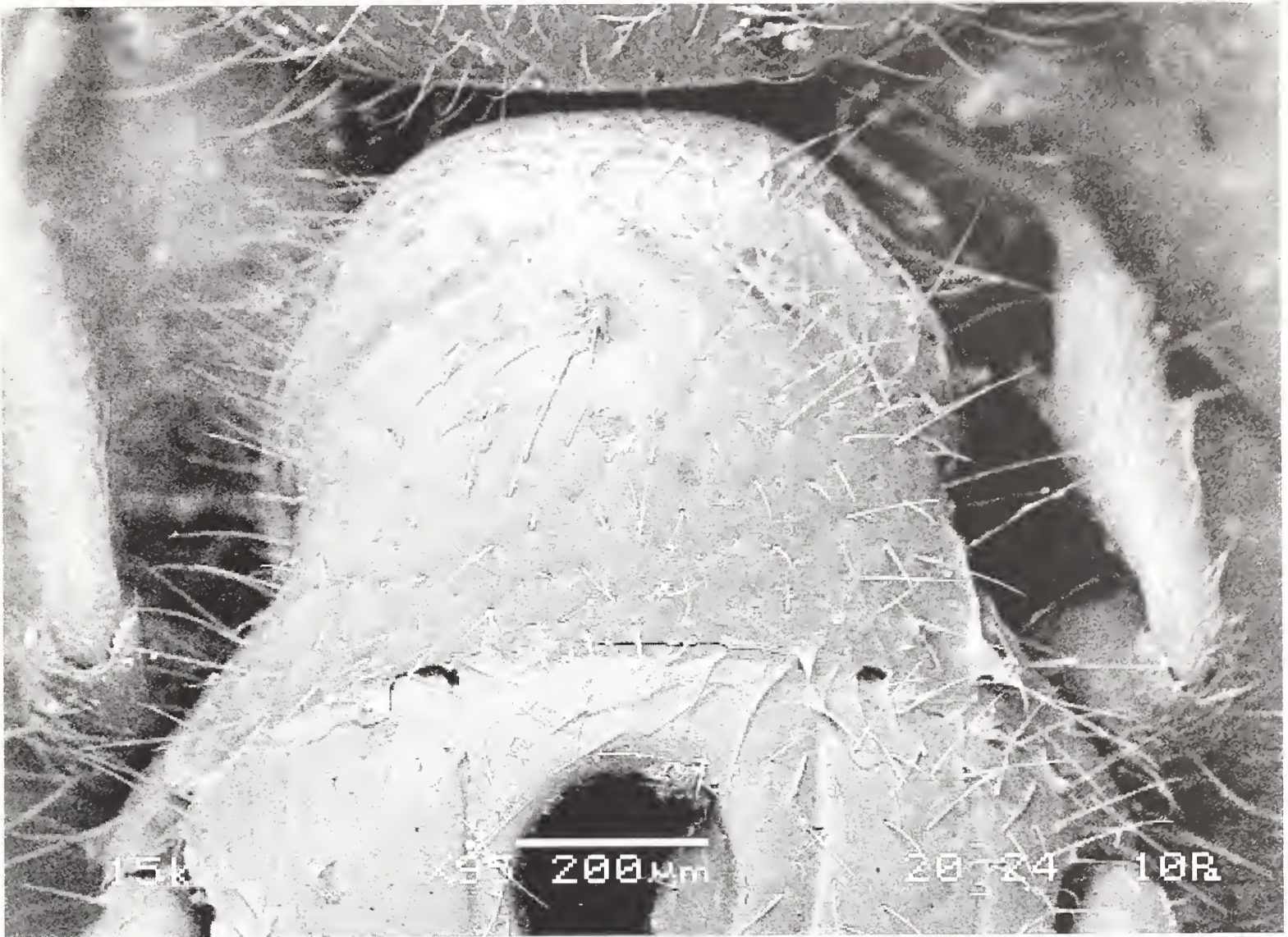


Fig. 1 – *Cleptes mareki* n.sp., holotype, pronotum.

Fig. 1 – *Cleptes mareki* sp.n., olotipo, pronoto.



Fig. 2 – *Cleptes mareki* n.sp., holotype, propodeum.

Fig. 2 – *Cleptes mareki* sp.n., olotipo, propodeo.

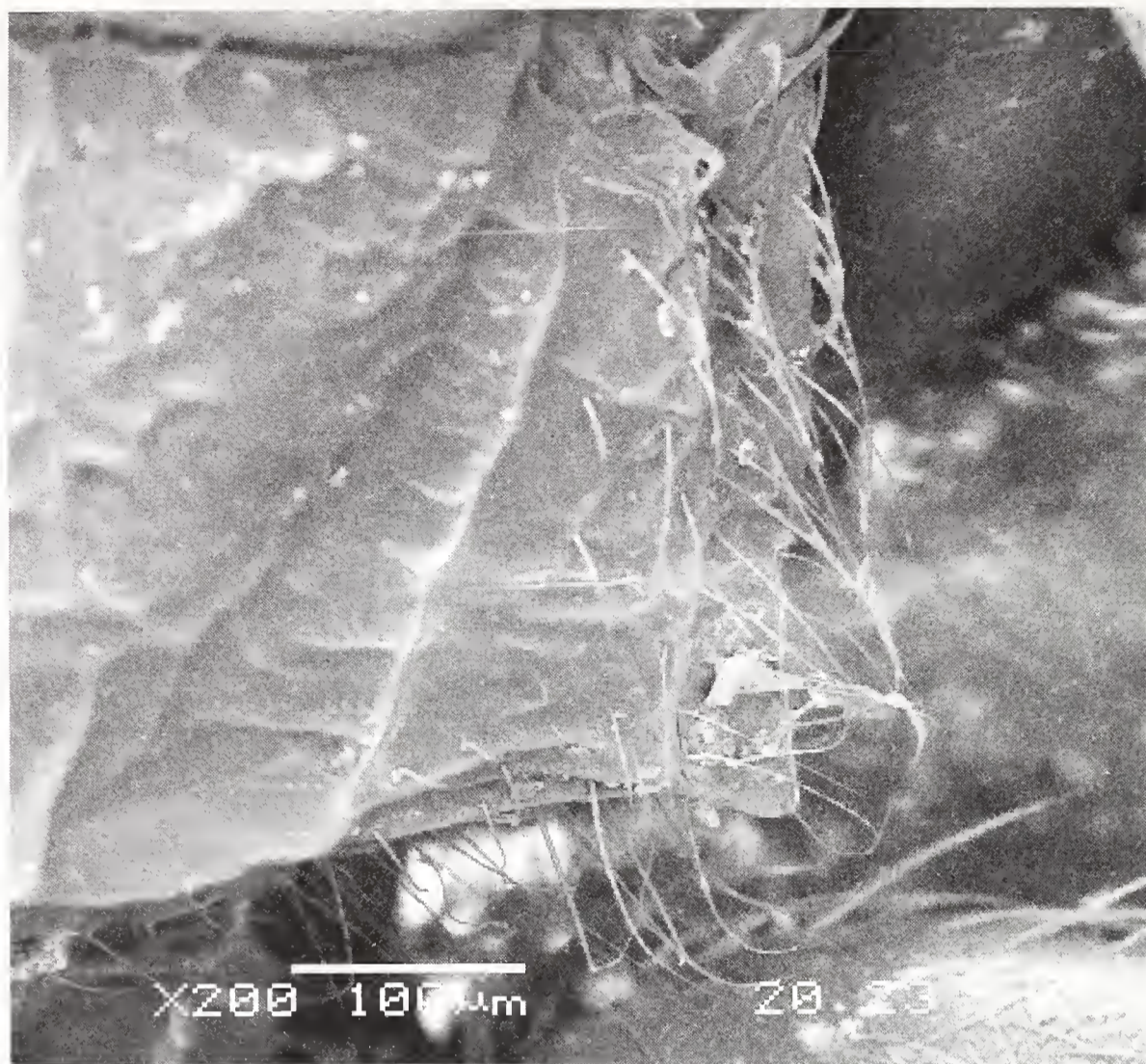


Fig. 3 – *Cleptes mareki* n.sp., holotype, propodeal angle.  
 Fig. 3 – *Cleptes mareki* sp.n., olotipo, angolo propodeale.



Fig. 4 – *Cleptes mareki* n.sp., holotype, aedeagus, ventral view.  
 Fig. 4 – *Cleptes mareki* sp.n., olotipo, edeago, visione ventrale.

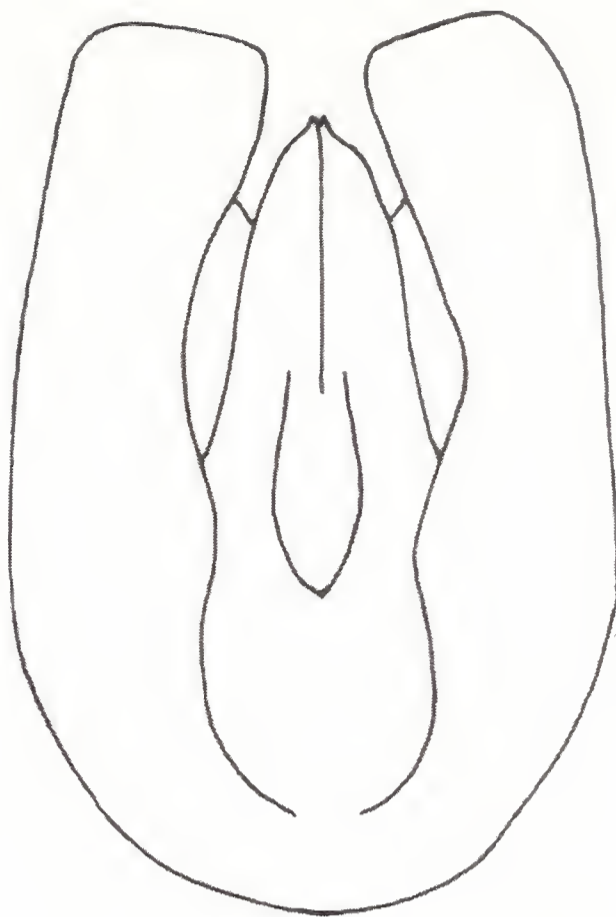


Fig. 5 – *Cleptes mareki* n.sp., paratype, aedeagus, dorsal view (as mounted in Euparal).  
 Fig. 5 – *Cleptes mareki* sp.n., paratipo, edeago, visione dorsale (come preparato in Euparal).

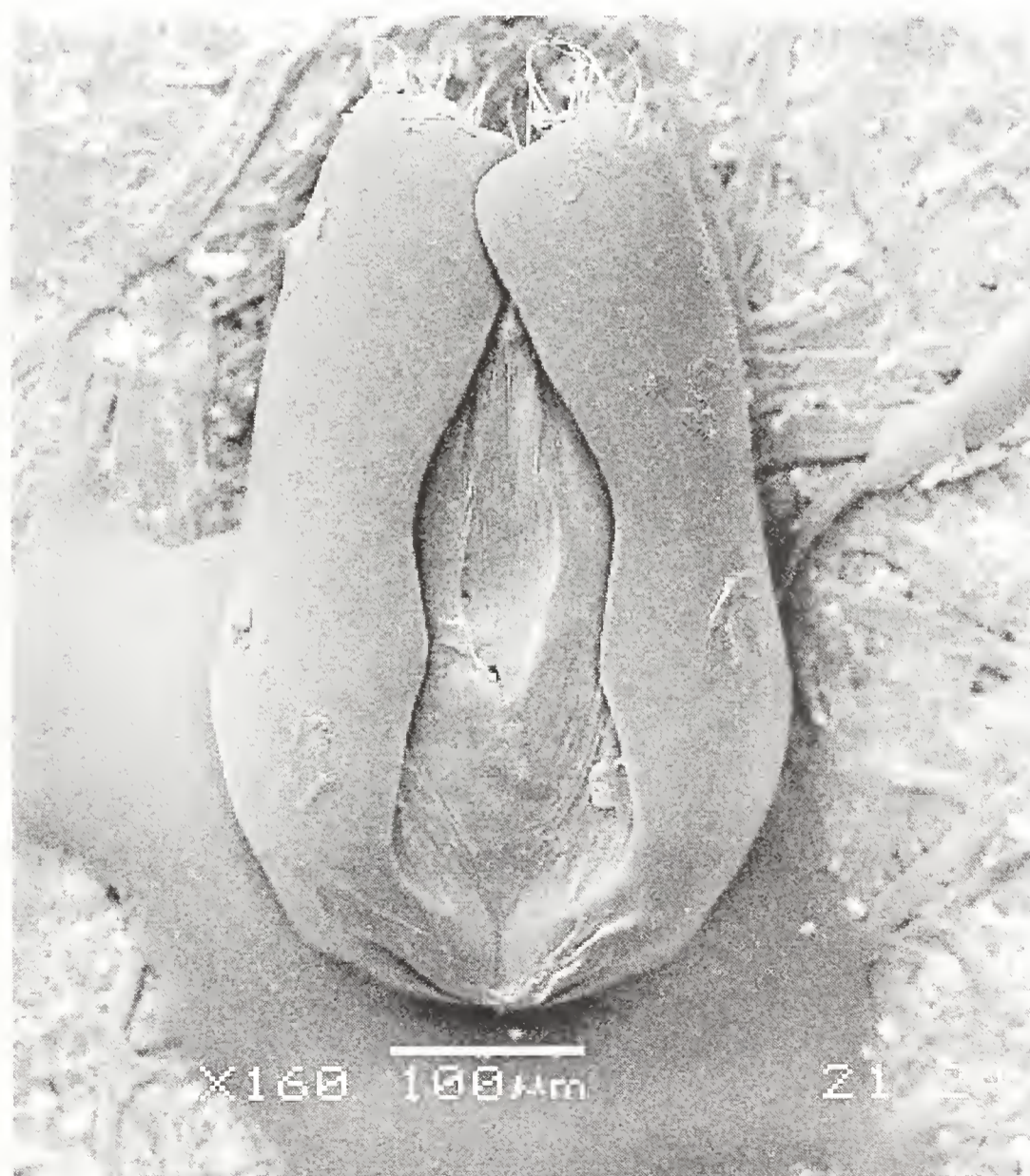


Fig. 6 – *Cleptes mareki* n.sp., paratype, aedeagus, dorsal view (dry mounted).  
 Fig. 6 – *Cleptes mareki* sp.n., paratipo, edeago, visione dorsale (preparato a secco).

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